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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,862	01/29/2004	Haruo Sawa	7345	2636

39196 7590 10/31/2007  
SHLESINGER, ARKWRIGHT & GARVEY LLP  
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ALEXANDRIA, VA 22314

EXAMINER
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RUTHKOSKY, MARK

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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10/31/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/765,862

**Applicant(s)**

SAWA, HARUO

**Examiner**

Mark Ruthkosky

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1 and 5-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                    |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                               | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/19/2007</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement filed 7/19/2007 has been placed in the application file, and the information referred to therein has been considered as to the merits.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The instant claims are to a solid electrolyte including a complex compound which is composed of polyvinyl alcohol, water, and at least one inorganic compound selected from silicic acid compound, tungstic acid compound, molybdic acid compound, stannic acid compound, and zirconic acid compound, characterized by a part or all hydroxyl groups of the polyvinyl alcohol domain are acetalized by a reaction of aldehyde with said solid electrolyte including complex compound, and are replaced by groups having less water absorption than that of an hydroxyl group.

Art Unit: 1795

The instant claims are to a product, a solid electrolyte. Applicant's claims include numerous process limitations that describe steps for making the electrolyte. These limitations have been considered, but are not given patentable weight. MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." The limitation, "are acetalized by a reaction of aldehyde with said solid electrolyte including complex compound, and are replaced by groups having less water absorption than that of a hydroxyl group" defines a process and is a limitation that has been considered, but is not given patentable weight.

Claims 1 and 5-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsudaira et al. (US 4,448,493.)

Matsudaira et al. (US 4,448,493) teaches a solid electrolyte including a complex compound which is composed of polyvinyl alcohol, water, and at least one inorganic compound selected from silicic acid compound, tungstic acid compound, molybdic acid compound, stannic acid compound, and zirconic acid compound, characterized by being produced by replacing a part or all of hydroxyl groups of polyvinyl alcohol domain to groups each of which has a water absorption less than that of said hydroxyl group (see col. 4, line 27 to col. 6, line 60.) Partially acetylated PVA is taught in col. 6, lines 45-60.) Silicic, stannic, and zirconic acid compounds are taught. Titanium compounds are also taught (col. 4, lines 25-35.) The acid materials may be

Art Unit: 1795

mixed. The mixture forms a complex compound as the moieties interact forming complex structures, for example, by hydrogen bonding. Other materials are added to the electrolyte layer including inks (see the examples) and electrode materials (col. 3 and col. 6-8.) The electrolyte is used in an electrochromic device. Thus, the claims are anticipated.

The rejection of claims 1-14 under 35 U.S.C. 102(b) as being anticipated by Sawa et al. (US 2003-007133) has been overcome by applicant's amendment to the claims.

Sawa et al. (US 2003-007133) teaches a solid electrolyte including a complex compound which is composed of polyvinyl alcohol, water, and at least one inorganic compound selected from silicic acid compound, tungstic acid compound, molybdic acid compound, stannic acid compound, and zirconic acid compound, characterized by being produced by replacing a part or all of hydroxyl groups of polyvinyl alcohol domain to groups each of which has a water absorption less than that of said hydroxyl group (see paragraph, p, 21-41, claims 1-16.) PVA is noted and may be modified with glycols, making PVA less water absorbing (p. 49.) Silicic acid compounds are taught. Other additives are taught. The mixture forms a complex compound as the moieties interact forming complex structures, for example, by hydrogen bonding (p. 27.) The electrolyte is used in a fuel cell (p. 25, 71.) Sawa et al. (US 2003-007133) does not teach replacing a part or all of hydroxyl groups of polyvinyl alcohol domain wherein a part or all hydroxyl groups of the polyvinyl alcohol domain are acetalized.

***Claim Rejections - 35 USC § 103***

The rejection of claim 15 under 35 U.S.C. 103(a) as being unpatentable over Matsudaira et al. (US 4,448,493) OR Sawa et al. (US 2003-007133) in view of Nakano et al. (US 5,409,785) is moot as applicant has canceled the claim.

***Response to Arguments***

Applicant's arguments filed 7/5/2007 have been fully considered but they are not persuasive.

Applicant argues that the difference between the claimed complex compound of the present invention and the mixture taught in Matsudaira et al. is that the polyvinyl alcohol of Matsudaira et al. is unable to be solvated in water after milling of the polyvinyl alcohol with the inorganic compound. Applicant has not provided evidence of this and this feature is not claimed. Applicants note in the arguments that Matsudaira et al. at col. 6, line 53 discloses a "partially saponified vinyl acetate, partially acetylated polyvinyl alcohol" but for use as a raw polyvinyl alcohol. Because the polyvinyl alcohol is partially acetylated one would understand that the complex would have the same features as the claimed invention.

Further, applicant argues that although the prior art reference teaches a partially acetylated polyvinyl alcohol, there is no disclosure of an acetalizing step. As noted in the rejection, the instant claims are to a product, a solid electrolyte. Applicant's claims include numerous process limitations that describe steps for making the electrolyte. MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process,

Art Unit: 1795

determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” The limitation, “are acetalized by a reaction of aldehyde with said solid electrolyte including complex compound, and are replaced by groups having less water absorption than that of a hydroxyl group” defines a process and is a limitation that has been considered, but is not given patentable weight.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1795

*Examiner Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky

Primary Patent Examiner

Art Unit 1745

*MR Ruthkosky 10.26.07*